

Claims

1. A soldering method carried out using a solder bath to which an oxidation suppressing element is added to carry out soldering while controlling the concentration of the oxidation suppressing element in the bath to be within a prescribed range,
5 characterized by:

using as a replenishment solder alloy a solder alloy including the oxidation suppressing element and having the same alloy composition as the solder bath except for the oxidation suppressing element;

10 finding the rate of decrease of the oxidation suppressing element in the solder bath during soldering; and

charging the replenishment solder alloy containing the oxidation suppressing element in the same or larger proportion than the rate of decrease of the oxidation suppressing element which is consumed at the rate of decrease into the solder bath as
15 soldering progresses.

2. A soldering method carried out using a solder bath to which an oxidation suppressing element is added to carry out soldering while controlling the concentration of the oxidation suppressing element in the bath to be within a prescribed range,
20 characterized by:

the solder alloy which makes up the solder bath being a lead free solder alloy which includes copper as an alloy component;

using as a replenishment solder alloy a solder alloy including the oxidation suppressing element and having the same alloy composition as the solder bath except
25 for the oxidation suppressing element and copper;

finding the rate of decrease of the oxidation suppressing element in the solder bath during soldering; and

charging the replenishment solder alloy containing the oxidation suppressing

element in the same or larger proportion than the rate of decrease of the oxidation suppressing element which is consumed at the rate of decrease and containing copper or not containing copper into the solder bath as soldering progresses.

5 3. A soldering method as set forth in claim 1, characterized in that the oxidation suppressing element in the replenishment solder alloy has 2 to 6 times the concentration of the target concentration of the oxidation suppressing element in the solder bath.

10 4. A soldering method as set forth in claim 2, characterized in that the oxidation suppressing element in the replenishment solder alloy has 2 to 6 times the concentration of the target concentration of the oxidation suppressing element in the solder bath.

15 5. A soldering method as set forth in any one of claims 1 - 3 characterized in that the oxidation suppressing element is at least one element selected from the group consisting of P, Ge, Ga, and Ce.

20 6. A lead free solder alloy for replenishing a solder bath with respect to a solder bath comprising an alloy containing Sn and Ag, characterized by further containing 60 - 100 ppm by mass of P.

25 7. A lead free solder alloy for replenishing a solder bath with respect to a solder bath comprising an alloy containing Sn, Ag, and Cu, characterized by further containing 60 - 100 ppm by mass of P.

8. A lead free solder alloy for replenishing a solder bath with respect to a solder bath comprising an alloy containing, in mass %, Ag: 2.5 - 3.5%, Cu: 0.2 -

0.9%, and a remainder of Sn, characterized by further containing 60 - 100 ppm by mass of P.